18. Medium according to one of the preceding claims, characterized in that it transits from a viscosity V1 of between 50 and 1 000 $mPa.m^{-1}.s^{-1}$ (SI unit) at a temperature T1 of between 15 and 30°C to a viscosity V2 which is greater than V1 by a factor of between 2 and 50 at a temperature T2 of the order of 40°C or higher and in that it comprises between 5 g/100 ml and 20 g/100 ml of copolymers possessing

- an average molecular mass of between 30 000 and 2 000 000 or a number of atoms along the main skeleton of between 1 000 and 60 000,

- a fraction by mass of segments with LCST of between 2% and 20%, and

- an average molecular mass of the segments with LCST of between 2 000 and 20 000 or an avarage number of atoms along a segment with LCST of between 35 and 350.

19. Medium according to one of Claims 1 to 17, characterized in that it transits from a viscosity V1 of between 100 and 10 000 $mPa.m^{-1}.s^{-1}$ at a temperature T1 of between 15 and 30°C to a viscosity V2 which is greater than V1 by a factor of between 2 and 100 at a temperature T2 of the order of 40°C or higher and in that it comprises between 1 g/100 ml and 8 g/100 ml of copolymers possessing

- an average molecular mass of between 500 000 and 3 000 000 or a number of atoms along the main skeleton of between 7 000 and 90 000,

- a fraction by mass of segments with LCST of between 2.5% and 15%, and

- an average molecular mass of segments with LCST of between 4 000 and 30 000 or an average number of

atoms along a segment with LCST of between 60 and 600.

20. Medium according to one of Claims 1 to 17, characterized in that it transits from a viscosity V1 of between 100 and 10 000 $mPa.m^{-1}.s^{-1}$ (SI unit) at a temperature T1 of between 15 and 30°C to a viscosity V2 which is greater than V1 by a factor of between 2 and 100 at a temperature T2 of the order of 40°C or higher and in that it comprises between 0.1 g/100 ml and 5 g/100 ml of copolymers possessing

- an average molecular mass greater than 500 000 or a number of atoms along the main skeleton greater than 7 000,
- a fraction by mass of segments with LCST of between 2% and 15%, and
- an average molecular mass of the segments with LCST greater than 4 000 or an average number of atoms along a segment with LCST greater than 90.

21. Medium according to one of the preceding claims, characterized in that the said copolymer is present in the said medium and the copolymer concentration is less than 20 g/100 ml, and preferably between 0.1 g/100 ml and 8 g/100 ml.

22. Medium according to one of the preceding claims, characterized in that it comprises, in addition, adjuvants of the type including particles, water-soluble polymers, nonthermothickening associative polymers, or surfactants, which may be neutral or ionic.

23. Use of a medium according to one of the preceding claims, for the separation or analysis of species chosen from molecular or macromolecular species, and in

particular biological macromolecules such as nucleic acids (DNA, RNA, oligonucleotides), nucleic acid analogues obtained by chemical synthesis or modification, proteins, polypeptides, glycopeptides and polysaccharides, organic molecules, synthetic macromolecules or particles such as mineral particles, latex, cells or organelles.

24. Use of a medium according to one of Claims 1 to 22, for the sequencing of DNA.

25. Use according to Claim 24, characterized in that to separate molecules having a molecular mass of less than 50 000 or oligonucleotides comprising less than 100 nucleotides, or else native or denatured proteins, a medium according to Claim 18 is used.

26. Use according to Claim 24 or 25, characterized in that to separate products of reaction of DNA sequences, DNA duplexes of less than 1 000 base pairs, denatured proteins or synthetic or natural polymers having a molecular mass of between 20 000 and 1 000 000, a medium according Claim 19 is used.

27. Use according to Claim 24, characterized in that to separate DNA duplexes having a size of between 500 bases and several millions of base pairs, or particles such as latexes, whole cells, whole chromosomes or organelles, a medium according to Claim 20 is used.

28. Use according to one of Claims 24 to 27, characterized in that it comprises the following steps:

- selecting the said separation medium according to the characteristics of the species to be separated;

- introducing this medium into a separating channel of an electrophoresis apparatus in a sufficient